

the device being characterized in that:

each LED is formed with multiple facets such that the facets of adjacent LEDs adjoin one another in close proximity throughout their length; and the light guide is tapered from an input end to an output end so that the irradiance of the beam at the output end is increased.

By  
cont

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#### REMARKS

The Office Action objects to the drawings because they include reference numerals that refer to more than one respective structure. The applicant has amended Figures 5-7 by adding prime symbols to differentiate between different variations of similar structures where appropriate. The amendments are shown in red on the enclosed proposed drawing correction sheets. Therefore, the drawings are now in acceptable form. The applicant has also amended corresponding portions of the specification accordingly.

The Office Action rejects claims 1-15, 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Belfer.

In response, the applicant has amended claim 1 to further recite a light guide that receives the beam of radiation emitted by the LEDs and that is tapered from an input end to an output end so that the irradiance of the beam from the LEDs is increased at the output end. Belfer neither discloses nor suggests such a structure. In fact, to modify the Belfer device to include such a structure would defeat the purpose of the Belfer device. Rather than being designed to produce an intensified beam of radiation as in the present invention, the Belfer device is designed to display information, e.g., in the form of an exit sign as shown in Figure 6 of the Belfer reference.

As amended, claim 1 is patentable over Belfer as are dependent claims 2-15, 17 and 18.

March 15, 2002


The Office Action rejects claims 16 and 28 under 35 U.S.C. § 103(a) as being unpatentable over Belfer in view of Kennedy. In response, the Applicant maintains that claims 16 and 28 are allowable because they depend from an allowable base claim.

Please enter the amendments under the provisions of 37 CFR §1.116 and reconsider claims 1-18 and 21-29 in view of the foregoing amendments and remarks. The applicant respectfully submits that the application is now in condition for allowance.

I authorize the Assistant Commissioner to charge any deficiencies, or credit any overpayment associated with this communication to Deposit Account No. 50-0852. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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Date: March 15, 2002

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED  
MAR 20 2002  
TECHNOLOGY CENTER 2800

In re application of:

Robin Walter Mills et al.

Serial No. 09/509,433

Group Art Unit: 2875

Filed: May 30, 2000

Examiner: I. Negron

For: OPTICAL IRRADIATION DEVICE

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**MARKED UP COPY OF AMENDED PORTIONS OF THE SPECIFICATION**  
**AND OF AMENDED CLAIM 1**

Honorable Commissioner for Patents  
Washington, D.C. 20231

Sir:

IN THE SPECIFICATION:

The first full paragraph on page 10, is amended as follows:

In another embodiment of the invention, illustrated in Figure 6, two or more adiabatic tapered light guides [41] 41' are arranged in series, each with a corresponding cluster of LEDs [43] 43'', 43''', but with successive clusters forming a ring around the end of one light guide as it connects to the next. Alternatively, each successive ring of LEDs [43] 43''' may be replaced by just one or a fewer number of LEDs. This arrangement allows the overall diameter of the device to be kept relatively small as the LED clusters [43] 43'', 43''' are arranged in groups along the length of the device.

The third sentence of the first full paragraph on page 11, is amended as follows:

Preferably, therefore, in one embodiment of the invention, illustrated in Figure 7, the guide comprises a few shaped fibres 61, 61' placed adjacent to each other and fused together.

The third sentence of the first full paragraph on page 14, is amended as follows:

A thermal connector 48 may be provided between the LEDs [43] 43' and the end of the heat pipe 45.

## IN THE CLAIMS:

Claim 1 (amended). An optical irradiation device comprising:  
an array of light emitting diodes (LEDs) clustered so that radiation they emit is  
directed into a beam; and

a light guide to receive the beam of radiation emitted by the LEDs;

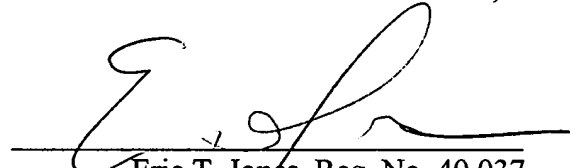
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irradiance of the beam at the output end is increased.

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